



AFS-400 Field Update

Flight Technologies and Procedures Division

"Improving Safety and NAS Operations through Flight Technologies and Procedures"

Volume 2, Issue 3:

Fall 2015

A Message from Bruce

I am pleased to welcome you to the AFS-400 Fall Field Update of 2015!

With an expected increase in travel from this time last year, airlines met flying public demand by increasing schedules with more flight plans and larger planes. I wanted to take this time to remind you that each and every one of us plays an integral role in providing our country with aviation safety through a few of our cornerstones excellence, integrity, and innovation.

As summer comes to an end and we enter the fall season, I hope that you found time this summer season to enjoy some rest and relaxation with your families and loved ones.

Please continue to provide us your feedback as well as topics and ideas for future newsletters. Our goal is to provide useful information as it relates to Flight Technologies and Procedures as well as updates on the excellent work we deliver which serves as a foundation of success for the FAA.

Bruce DeCleene

Manager, Flight Technologies and Procedures Division, AFS-400



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Highlighted Stories

Required Navigation Performance (RNP)

The release of Advisory Circular (AC) 90-105A, *Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace*, this fall provides new guidance for most RNP operations with the exception of Required Navigation Performance Authorization Required (RNP AR) found in AC 90-101A. This updated AC provides a full range of RNP operations for en route, terminal and approach phases of flight. The AC also introduces the bundling concept and incorporates two FAA Orders, 8400.33 and 8400.12C, for RNP 4 and RNP 10. It also includes an appendix for barometric vertical navigation for approach operations (LNAV/VNAV).

For over a year, AFS-470 collaborated with the aviation community through the Performance-Based Operations Aviation Rulemaking Committee (PARC) in order to complete two primary objectives:

1. Harmonization of the AC with ICAO Document 9613, Performance-based Navigation (PBN) Manual and,
2. Introduction of three new RNP operations into the NAS:
 - a. RNP 0.3 for rotorcraft,
 - b. RNP 2 (domestic and oceanic/remote continental operations), and
 - c. Advanced RNP

Though these new RNP operations are not yet active in the NAS, AC 90-105A, in conjunction with updated operations specifications, provides the necessary guidance and sets the standards to enable these operations to become a reality in the very near future.

Currently in the United States, RNP 0.3 operations is for helicopters only and is primarily for en-route low level operations in mountainous, remote areas and in high density airspace as in metroplex areas. RNP 0.3 takes advantage of Wide Area Augmentation System (WAAS) technology to ensure safe obstacle clearance.

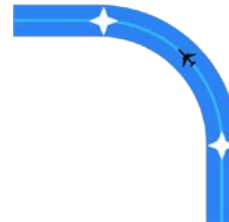
The introduction of RNP 2 operations is for en route domestic and also for oceanic and remote continental operations. Depending on the operation, a single or dual GNSS navigation system may be required.

The United States has defined Advanced RNP (A-RNP) in this AC for aircraft systems capable of performing the following:

- Scalability,
- Radius to fix (RF), and
- Parallel offset.

Higher continuity may be required for oceanic and remote airspace. Currently, fixed radius transition (FRT) and time of arrival control (TOAC) are optional advanced functions. For A-RNP qualified operators, bundled PBN authorization(s) can be further combined with A-RNP functions.

Figure 1: Radius to fix (RF)



The bundling concept introduced in this AC provides the FAA more latitude in granting a wider range of authorizations on a single operator application. Each flight phase contains a hierarchy of PBN authorizations where bundling may be accomplished. PBN authorizations within an OpSpec, MSpec or LOA are combined with less restrictive PBN authorizations within each phase of flight, if applicable. This reduces cost and workload for both the operator and the FAA.

In summary AC 90-105A provides a wealth of guidance for RNP operations. It is arranged with a general section applicable to all RNP operations followed by specific RNP guidance found in the appendices. Hyperlinks are used throughout the document for both internal and external references. With the exception of RNP AR, this document is the “go-to” document for RNP operational guidance over the next few years.

For more information on Advisory Circular (AC) 90-105A, please contact Trent Bigler at Trent.Bigler@faa.gov.

Highlighted Stories (Continued)

Special and Waivers Inventory Management System (SWIMS)

Since 2012 AFS-460 has been working on the development of a workflow tracking system for Instrument Procedure Packages. SWIMS was developed to replace SharePoint as the processing tool and repository for Special Instrument Flight Procedures and Waivers. The SWIMS database has been in the testing and development stages for the last two years.

This new program will allow users to track Specials and Waivers packages from creation to implementation. As a key feature, from the initial receipt, through the review and comment stage, to the final approval/disapproval step, the system will permit various types of users with authorized responsibilities to participate in the process. As a web-based system, SWIMS now allows us to free up space on the SharePoint site and the capability for users to access information from anywhere in the world. This has eliminated the need to download from our local drives and offers the ability to sign procedure packages with multiple signature requirements.

SWIMS is now operational, although we anticipate future upgrades to include making it available to third-party (non-FAA) users.

For questions regarding this project, please contact Ken Langert at kenneth.langert@faa.gov.

Employee Spotlight

Lawrence Patterson



Q: What do you do, how long have you been with FAA, and where are you based?

LP: I'm a Terminal Instrument Procedures Specialist (TERPS) in Oklahoma City. I've been with the FAA for 8 years, Department of Transportation 12 years.

Q: How did you begin your career with the FAA?

LP: I was a retired Air Force air traffic controller and answered an ad for a TERPS instructor with the Transportation Safety Institute. After five years, I transitioned to the FAA working in Flight Technologies and Procedures Division, Flight Procedure Implementation and Oversight Branch.

Q: What is your favorite part about working here?

LP: The best part about working in the FAA and Flight Standards, aside from forging new relationships, is knowing the work I do actually impacts the overall safety of the National Airspace System (NAS).

Q: Best life lesson?

LP: Two Quotes, the first by Dr. Martin Luther King Jr., "Many people fear nothing more terribly than to take a position which stands out sharply and clearly from the prevailing opinion". And anonymous, "It's better to walk alone, than with a crowd going in the wrong direction".

Q: What is your greatest accomplishment?

LP: I would say "our" instead of "my" greatest accomplishment, would be family. Being fortunate enough to have a spouse who has been my closest friend can never be overstated (35 years and counting). Together, we were able to provide positive examples and be those strong role models like our parents before us, for our son's to emulate, both of whom are successful in their own right and raising two beautiful granddaughters.

Employee Spotlight (Continued)

Cathy Graham



Q: What you do, how long have you been with FAA, and where are you based?

CG: I am an Aviation Safety Inspector for AFS-470, Performance Based Flight Systems Branch in DC. I work on the ever evolving guidance and policy for Global Navigation Satellite System (GNSS) operations, primarily augmentations to GPS with Wide Area Augmentation System (WAAS) and Ground Based Augmentation System (GBAS).

Q: How did you begin your career with the FAA?

CG: I served in the US Air Force as a C-21 Learjet instructor and command pilot on the C-130 E/H3 Hercules transport aircraft. I got to fly operations on 5 continents but after multiple Christmas deployments in the Middle East, I thought there might be more adventures available closer to home and I found the FAA.

Q: What is your favorite part about working here?

CG: My work allows me to collaborate with a lot of great people from diverse backgrounds. My projects have afforded me the chance to work with each branch in AFS-400 and I strategize with our colleagues in aircraft certification (AIR-131) and Navigation Programs. It is rewarding to have daily interactions with air traffic controllers, engineers, scientists, administrative professionals and other pilots.

Q: Best life lesson?

CG: As a second lieutenant, one of the instructor pilots used the motto, "Trust but Verify". I adopted this mantra and it has kept me safe as a flight instructor and works well to this day. We all do great work but mistakes happen so it helps everyone if we take a second to double-check.

Q: What is your greatest accomplishment?

CG: My family! My husband, Matthew is the best friend and example I could have and his encouragement drives me. My incredible parents, are amazing cheerleaders and a big part of my success. The best part of the day is time with our daughter Julia Evelyn, who inspires us daily.

System Safety

There are many activities conducted across the FAA that involve formal SMS efforts. Here is some current information:

In order to address National Airspace System-level (NAS-level) system risks many activities are underway to support Risk-Based Decision Making (RBDM). There is a formal Executive SMS committee and numerous supportive committees to establish methods to enable RBDM. These committees are developing criteria for cross-organizational SMS processes. Specific criteria for conducting cross-organizational system safety assessments (COSSA) are being developed. There are two candidate lists of systems requiring assessment: A list for Significant Safety Issues (SSI's) and a list for Planned NAS Changes.

There are two supportive teams for the cross-organizational SMS activities: the Safety Collaborative Team (SCT) At-large and the Core teams. The SCT has ranked both lists to prioritize SSI's and NAS changes to be evaluated.

Light Emitting Diode's (LED's) integrated into the NAS is the number one item on the SSI list. AFS-400 is leading the LED COSSA development.

For questions regarding System Safety, please contact Mike Allocco at Mike.Allocco@faa.gov.

Staffing Changes

New Additions:

[Jon Denton](#), TERPS Criteria Specialist, Flight Procedures Standards Branch, AFS-420

[Matthew Harmon](#), Aviation Safety Inspector, Flight Operations Branch, AFS-410

[William Hart](#), William Hart, Airspace Systems Inspection Pilot, AFS-440

[Caitlin Locke](#), Foreign Affairs Specialist, Aviation Safety, on detail to AFS-400 from AFS-50

[Dan Wacker](#), TERPS Criteria Specialist, Flight Procedures Standards Branch, AFS-420

Departures:

[Roger Sultan](#), Aviation Safety Inspector, Future Flight Technologies Branch, AFS-430

Notes & Announcements

Combined Federal Campaign (CFC)

The 2015 CFC Season has officially begun! Please join us over the next several months by contributing to a variety of charities and organizations. Please visit the FAA's [CFC Home Page](#) for more information on CFC events throughout this CFC season!

Feds Feed Families

Thank you to everyone who participated in the annual Feds Feed Families food drive. The FAA increased the previous year's goal and hopes to donate over 17,000 pounds of food. With just a few days left to the fundraiser; the FAA is well on its way of meeting this goal. If you have any items you'd still like to donate, please drop them off in the Orville Wright Building on the 2nd floor in the FFF box.

Newsletter Subscriptions:

The AFS-400 Newsletter is distributed on a quarterly basis. If you would like to subscribe to our newsletter, please email us at AVSNextGen@faa.gov and we will add you to our distribution list.

Employee Spotlight Nomination:

Nominate a peer to be featured in the "Employee Spotlight" section of our newsletter by sending his or her name to AVSNextGen@faa.gov. Please include how this individual contributed to AFS-400's mission.

Highlighted Stories Submissions:

If you have any suggestions on a highlighted story that supports AFS-400's efforts and you feel should be considered for an upcoming featured story, please email us at AVSNextGen@faa.gov.

Division Updates

✓ Light Emitting Diode (LED) Symposium:

During the fall of 2014, AFS-410 conducted an LED aviation lighting issues symposium. The attendees were divided into three sub-groups: the Science Group, the Infrastructure Group, and the Operations and Flight Test Group. Coby Johnson, AFS-410 Manager, set out to achieve five main objectives: focus on approach lighting; identify needed areas of research and testing; achieve collaboration from stakeholders; establish a plan of action and timelines; and fix the problem.

These sub-groups have gained considerable ground related to multiple LED lighting issues and challenges. There were several sub-group meetings/teleconferences during spring and summer. A flight test plan protocol has been developed with first flights expected sometime in the next quarter subject to funding requirements. A follow-up top level meeting on 15 September assessed the groups' progress thus far and coordination for future activities is ongoing. There has been close interaction among the leadership of the three groups with Coby Johnson being the facilitator and overall lead.

For questions regarding this project, please contact Manny Rios at manuel.rios@faa.gov.

Division Updates (Continued)

✓ PARC Charter Renewal:

Since the Performance-based Operations Aviation Rulemaking Committee (PARC) Charter was renewed on June 9, 2014, the PARC has been very active working to ensure a harmonized National Airspace System (NAS). The PARC Steering Group has held several monthly teleconferences and a few face-to-face meetings which resulted in PARC sending 10 important recommendations to AVS-1. A few examples of the recommendations and the impact they have or will have on Performance-based Operations are:

- The Navigation Working Group's recommendations on Historical Winds provided draft criteria that may be used in the update of FAA Order 8260.50 *US Standard for Wide Area Augmentation Sys. (WAAS) LPV Approach Proc. Construction Criteria*
- The Vertical Navigation Working Group submitted recommendations regarding Optimal Profile Design and the FAA responded by sending PARC plan which documents the FAA's plan for incorporating the recommendations in the FAA Orders with the collaborative effort of AFS-420, AFS-470, and AJV-14
- PARC and Nav WG was tasked by AFS-420 to review STAR IAP Common Point draft document which will assist in updates to FAA Order 8260.58A *United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design*
- Communications Working Group worked on submitted recommendations to the PARC for DataLink Recording and modifications of the DataLink Recording Rule that made recommendations for the FAA to consider revising existing DataLink recording regulations and clarifying their interpretation as they apply to retrofit aircraft

PARC is currently working on the newly formed National Airspace System Performance Based Navigation (NAS PBN) Strategy Ad Hoc Working Group, suggested by the NextGen Advisory Committee (NAC), to work on a strategy document which will update the 2006 PBN Roadmap document the PARC worked on; the goals will layout the PBN strategy for the next 15 years. PARC's next steps are to continue the collaborative effort with the aviation community and provide direction for U.S. flight operations criteria and produce U.S. consensus positions for global harmonization.

For more information on PARC products, please visit the website [Performance-based Operations Aviation Rulemaking Committee \(PARC\)](#)

For questions regarding this project, please contact Carrie Brady at Carrie.CTR.Brady@faa.gov.

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